

Flight Scientist Report
Tuesday 6/01/2021 ACTIVATE RF75

Flight Type: Statistical Survey Flight

Flight Route:

Special Notes: ASTER underflight planned originally but called an au

King Air

Pilot report (Wusk):

Takeoff 1031 L

Land 1406 L

3.6 hours

Cooperative science flight with the HU-25. One flight day. Departed Rwy 26, targeted 1030 TO for overpass timing. Initial ATC departure to the west with a delayed turn on course to ECG. Initial climb to FL270, requested and received FL280 in AR8. Planned route was ECG-OXANA- (multiple lat/longs for ASTOR overpass)-OXANA-ECG. Past ECG word came up that ASTOR run scrapped, instead OXANA-PERDO-OXANA. Winds were extremely light at altitude. Aircraft geolocation became focus of flight (rather than overpass timing)and was very good throughout route. Descended out of FL 280 approximately 20 nm southeast of ECG. 4x dropsondes deployed. All objectives were achieved with no aircraft discrepancies noted. Crew was Coldsnow, Wusk, and Shingler.

Flight scientist report (Shingler):

Shallow cu seen over land between KLF1 and just after the coast with some light cirrus above the UC12. Skies cleared up towards OXANA and some shallow cu and mid level stratus developed closer to PERDO. Four sondes were dropped (OXANA on the way out, PERDO, mid point, and near the COAST). All instruments were operational.

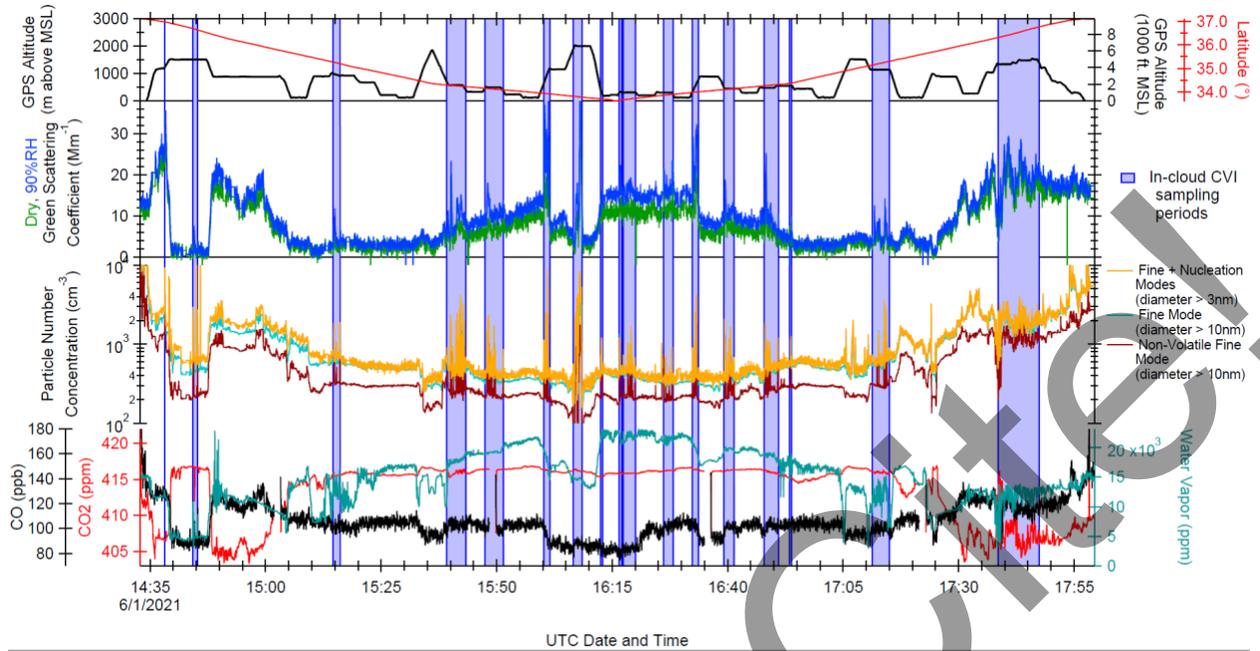
Falcon

Pilot report ():

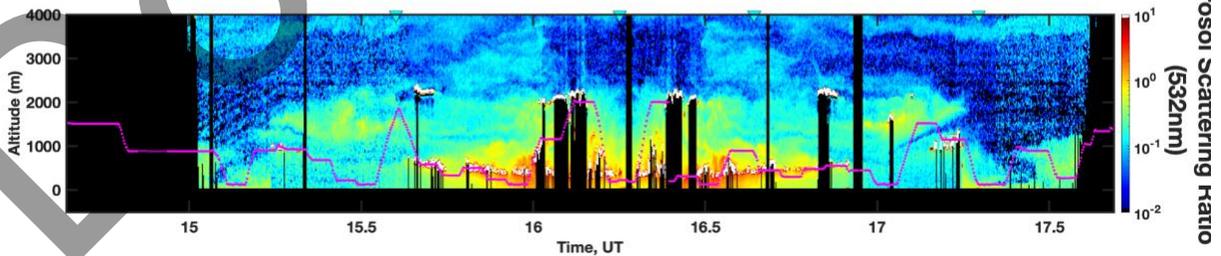
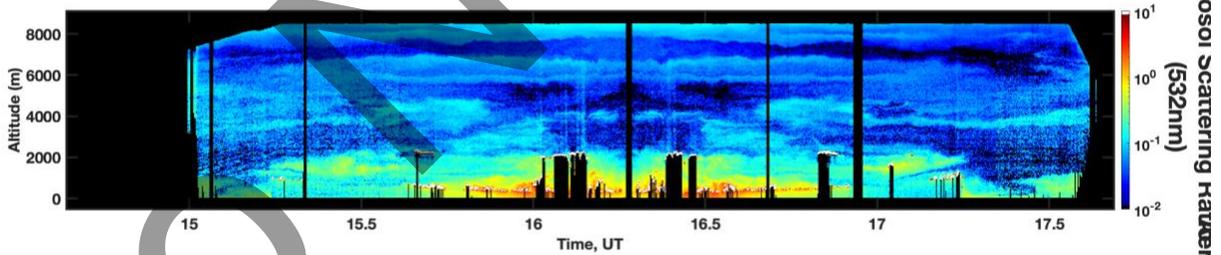
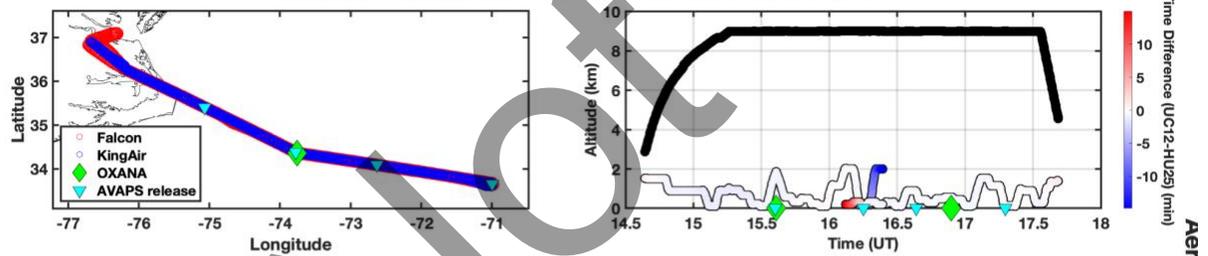
Flight scientist report (Crosbie):

There were shallow cumulus clouds over land on both the outbound and return legs. We adjusted our inbound plans to accommodate that as an opportunistic bonus. We managed to get 3 cloudy modules out of the flight but cloud conditions were very sparse in places. One CW sample was collected in the stratiform layer that appeared to be fed by deeper cumulus near the far turn point. There was a marked increase in sulfate and scattering with distance offshore towards the end point, but overall the aerosol mass concentration and scattering was quite low.





20210601 - ACTIVATE - KingAir and Falcon flight tracks



Aerosol Scattering Ratio (532nm)

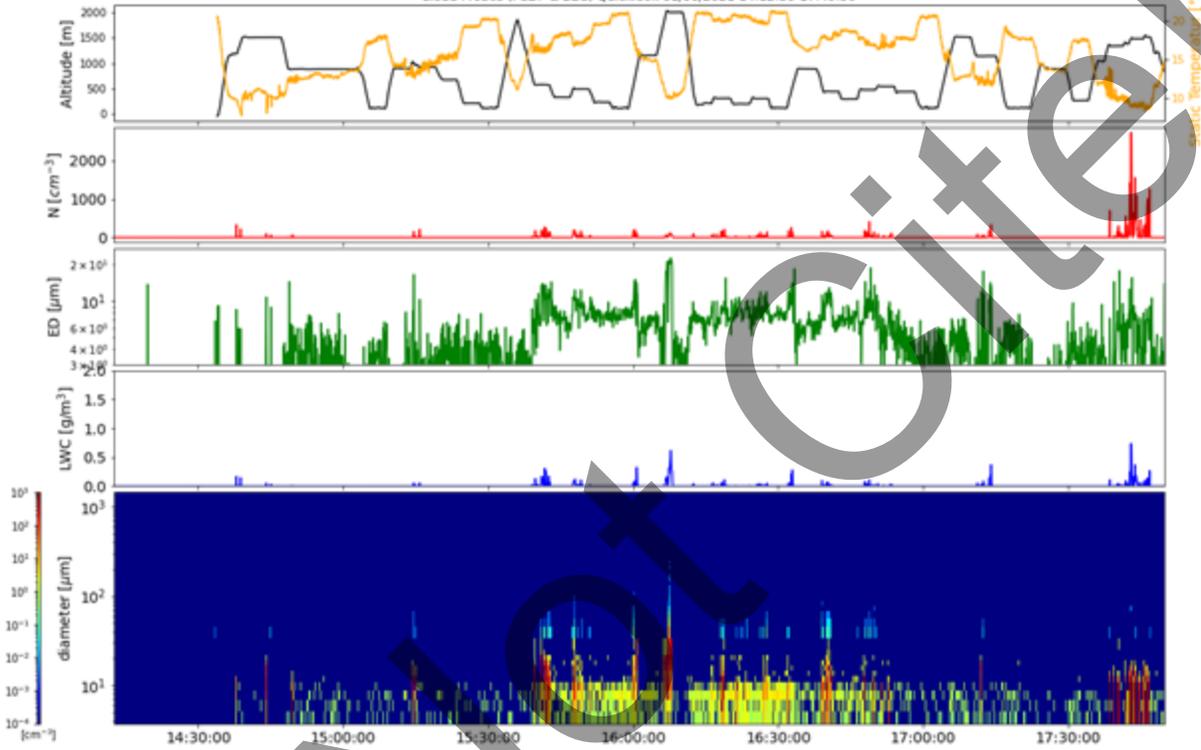
Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



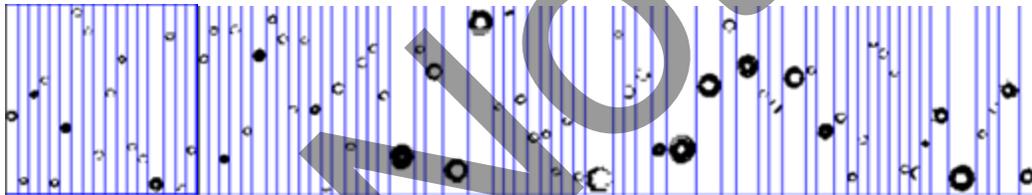
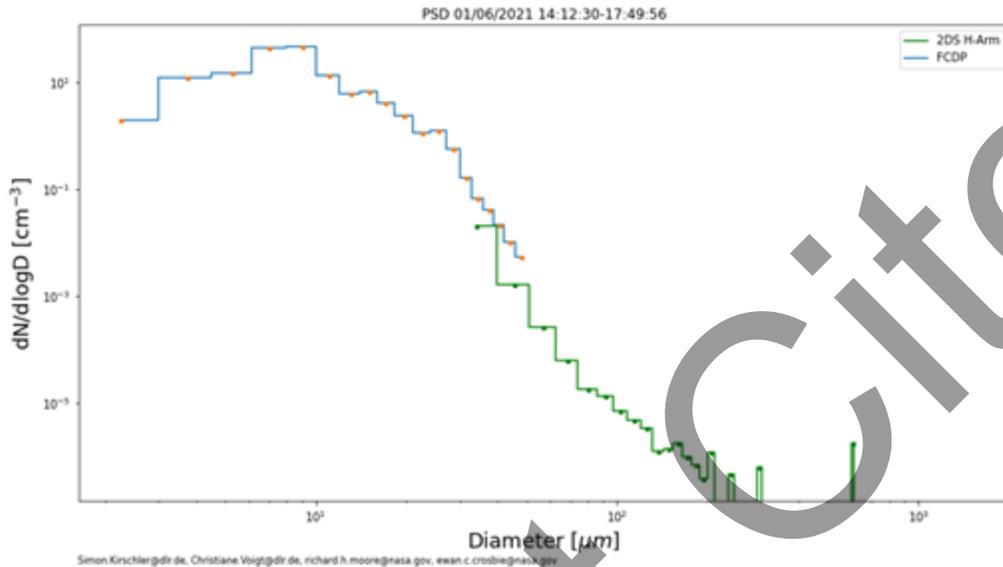
Cloud Probes (FCDP & 2DS) Quicklook 01/06/2021 14:12:30-17:49:56



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PSD ACTIVATE

preliminary data, only for quicklook use
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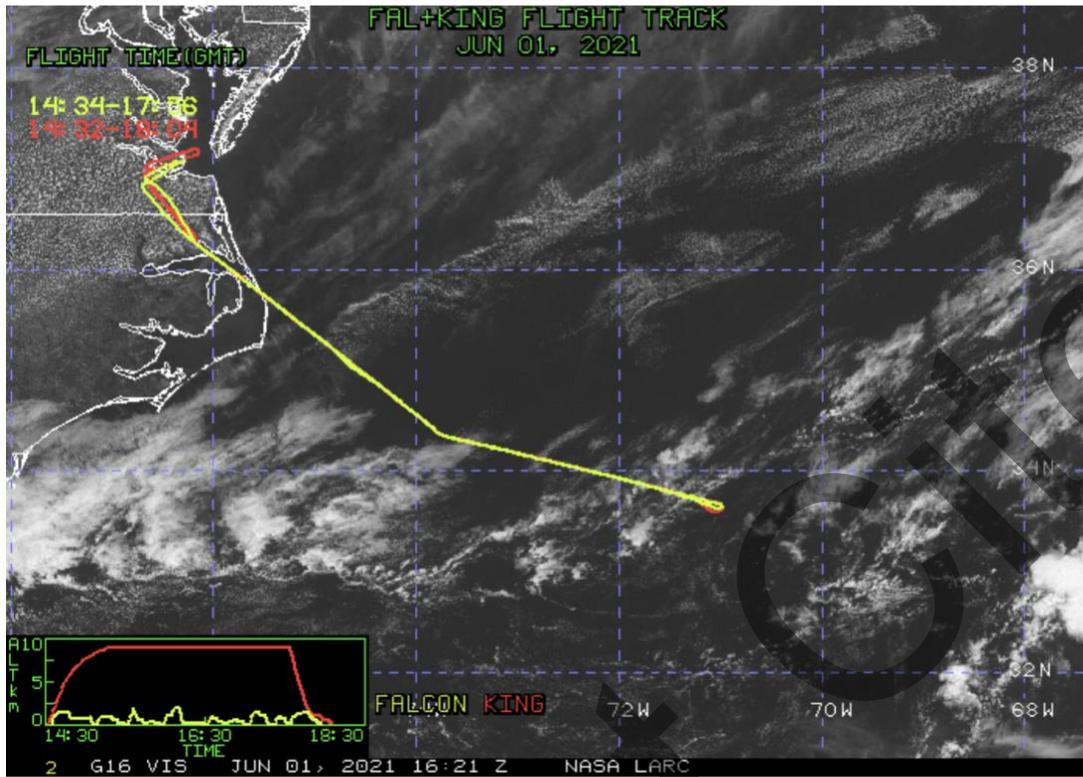
Only shallow pure liquid clouds without precipitation.

from Simon: The FCDP measured an interesting feature with high concentrations in the end of the flight which correlates with the in-cloud CVI sampling period. Could be a cloud formation process in a bloom at an early stage, because nearly non particles were $> 15 \mu\text{m}$.

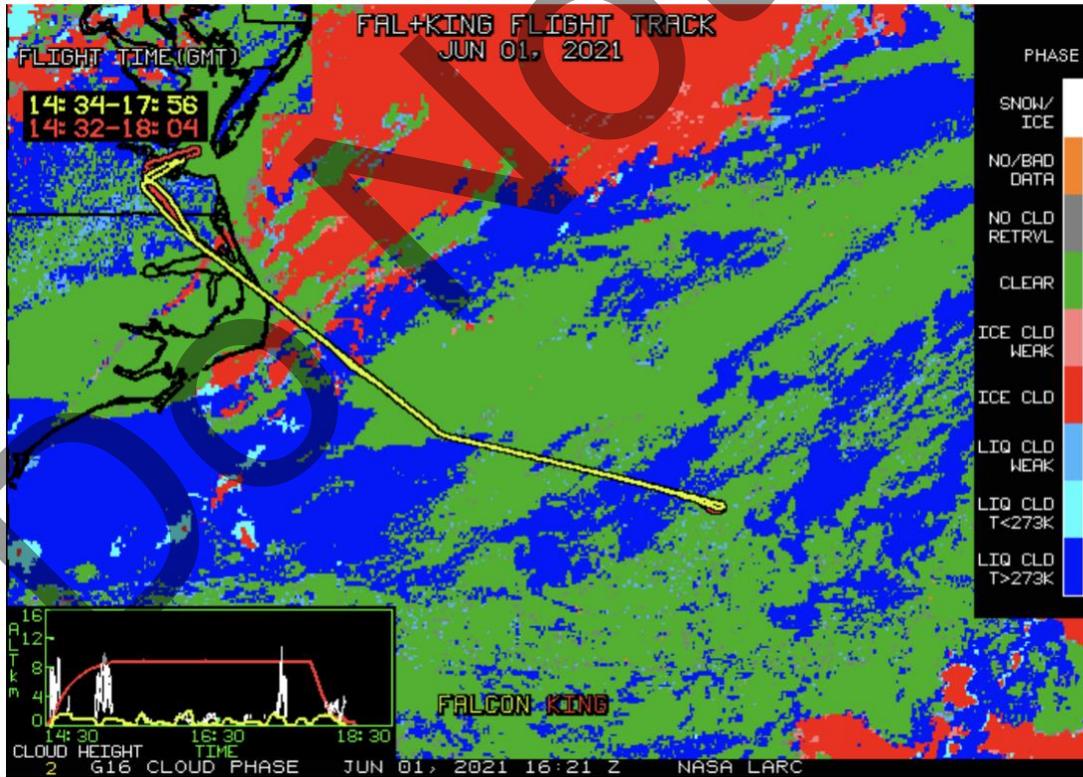
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 75, 16:21 UTC Jun 01, 2021

Do Not Cite!

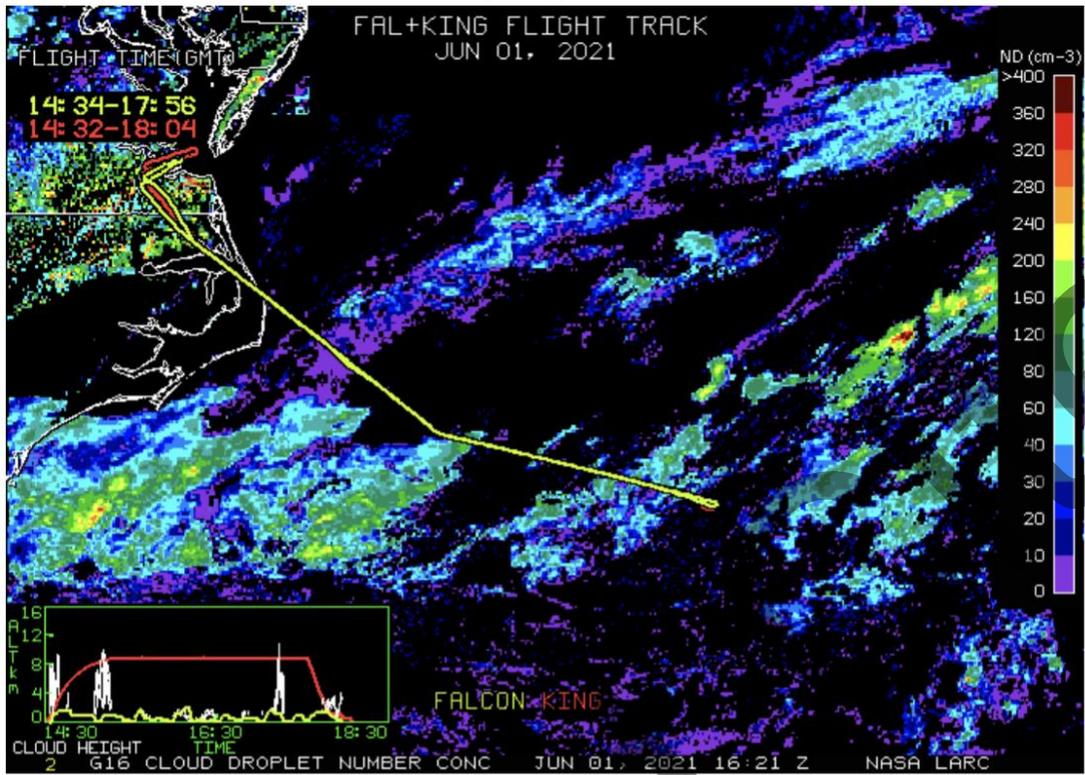
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

